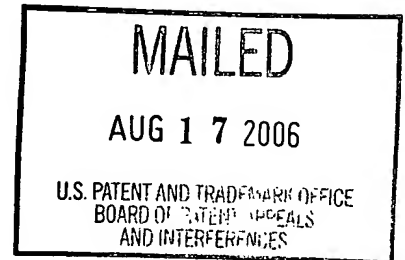UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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<u>Ex parte</u> GERARD BRIAND, JUAN MORONTA and ALAIN VERDIER

_____

Appeal No. 2006-1240
Application No. 10/075,839

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ON BRIEF

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> MAILED
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> AUG 1 7 2006
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> U.S. PATENT AND TRADEMARK OFFICE
> BOARD OF PATENT APPEALS
> AND INTERFERENCES

Before JERRY SMITH, BLANKENSHIP, and SAADAT, <u>Administrative Patent
Judges</u>.

SAADAT, <u>Administrative Patent Judge</u>.

<u>DECISION ON APPEAL</u>

This is a decision on appeal under 35 U.S.C. § 134(a) from
the Examiner's final rejection of claims 1-14.[1]

We reverse.

<u>BACKGROUND</u>

Appellants' invention is directed to a method and apparatus
for detecting the reliability of a field of movement vectors of
one image in a sequence of video images. According to Appellants,

_____

[1] Claims 15 and 16, which have been added during the prosecution,
appear to have been inadvertently omitted from the rejected claims.

since a movement-vectors field is temporally uniform over a video

sequence and undergoes very little time-domain variation, detecting

instability in the time-domain suggests unreliable movement-vectors

field (specification, paragraph bridging pages 1-2). In order to

detect the reliability of a field of movement vectors, Appellants

provide for a process that includes comparing the number of

occurrences of the majority of vectors over two successive images

and deciding on reliability on the basis of whether this measure

lies within a predetermined bracket (specification, page 2).

Representative independent claim 1 is reproduced below:

1. Method of detecting the reliability of a field of movement
vectors of one image in a sequence of video images, characterized
in that it includes a stage of calculating a stability parameter
Det_Stab(t) for the field, on the basis of a comparison (4), over
two successive images, of the number of occurrences of the majority
vectors of the movement-vectors fields of each of these images, a
field being defined as stable if the variation in the number of
occurrences lies within a predefined bracket, and a stage of
deciding on reliability (7) on the basis of this stability
parameter.

The Examiner relies on the following references in rejecting

the claims:

Avis et al. (Avis)   4,864,398   Sep. 5, 1989

Zhu   6,462,791   Oct. 8, 2002
                                        (filed Jun. 30, 1997)

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Claims 1-3, 8, 9, and 11-14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Zhu.

Claims 4-7, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhu and Avis.

We make reference to the brief and answer for the respective positions of Appellants and the Examiner.

                              OPINION

The main point of contention is based on whether the claimed comparison over two successive images of the number of occurrences of the majority vectors is the same as the comparison of each motion vector with the best vector of Zhu. The Examiner equates the claimed step of defining the stability of the fields as Step S570 of Zhu (Figure 8) and asserts that the decision is based on a stability parameter from the comparison step S330 (Figure 6) which shows comparing the number of occurrences as the majority voting process with a "THRESHOLD" value (answer, page 3).

Appellants argue that Figure 5 of Zhu relates to a motion vector field of one image and is not the same as the claimed comparing the number of occurrences of majority vectors within two successive images (brief, page 4). Appellants further contrast the motion vectors in Figure 5 of Zhu as having a single best motion orientation per region R (col. 4, lines 51-60) which is

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used for comparison with each motion vector of the region (id.).
Appellants further assert that Zhu, in fact, compares each motion
vector in a region with the best matching vector so that the motion
vector may be adjusted accordingly (brief, page 4).

In response to Appellants' arguments, the Examiner relies on
Figure 5 of Zhu and argues that element 225 counts the number of
the majority vectors (col. 5, lines 9-55) through a majority voting
process, which is shown as arrows or dots, in case they are ignored
(answer, page 5). The Examiner further argues that, similar to
Appellants' specification (page 9, lines 20-21), the stability
parameter is a binary setting of 1 or 0 which is set as 0 or V_{best}
on the basis of the comparison (id.).

Initially, we note that a rejection for anticipation under
section 102 requires that the four corners of a single prior art
document describe every element of the claimed invention, either
expressly or inherently, such that a person of ordinary skill in
the art could practice the invention without undue experimentation.
See Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d
1943, 1947 (Fed. Cir. 1999); In re Paulsen, 30 F.3d 1475, 1478-79,
31 USPQ2d 1671, 1673 (Fed. Cir. 1994). However, rejections based
on § 102 must rest on a factual basis wherein the burden of proof
is placed "on the Patent Office which requires it to produce the

factual basis for its rejection of an application under sections
102 and 103." In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ
785, 787-88 (Fed. Cir. 1984). The examiner may not, because of
doubt that the invention is patentable, resort to speculation,
unfounded assumption or hindsight reconstruction to supply
deficiencies in the factual basis for the rejection. See In re
Warner, 379 F.2d at 1017, 154 USPQ at 178 (CCPA 1967).

After a review of Zhu, we disagree with the Examiner that the
process depicted in Figures 6-8 results in defining a stable field
based on the variation in the number of occurrences being within a
predefined bracket and based on a comparison of the number of
occurrences over two successive images. Zhu in col. 4, lines 32-37
states:

> Majority Voter 225 scans through all the motion vectors in
> the region R to pick the motion vector that is the most
> representative in the region R. This process is described in
> detail below. Such a motion vector is referred to as the
> best matching vector V_{best}.

Additionally, Zhu describes that this best matching vector
is obtained by taking the average of all the orientation angles
and the average of the magnitudes of all the motion vectors in
region R which, in turn, is compared with all the other vectors V_i
(col. 5, lines 10-18). Therefore, although some comparison of
the number of occurrences of the majority vector for obtaining

the best matching vector over two successive blocks or regions R
is performed, it is done after the decision step S530 (Figure 8)
wherein the absolute difference between the motion vector and the
vector profile is compared with a threshold (col. 6, lines 22-32).

There is nothing in Zhu to indicate that any stability
decision is made based on whether the variation in the number of
occurrences lies within a predefined bracket after the number of
occurrences is compared. The closest Zhu comes to this comparison
is by the majority voting process which takes place after a
comparison with the threshold value determines the best matching
vector (Figure 6; col. 5, lines 37-55). Therefore, we agree with
Appellants (brief, page 5) that the absence of the specific order
of claimed process steps in the reference indicates that Zhu is
not concerned with transmitting a stability parameter by
determining the variation in the number of occurrences after those
numbers over two successive images are compared.

We note that independent claim 11 also requires means for
performing similar steps which are absent in Zhu. As the
references cannot anticipate any of independent claims 1 and 11,
we do not sustain the 35 U.S.C. § 102 rejection of claims 1 and
11, as well as claims 2, 3, 8, 9 and 12-14 dependent thereon over
Zhu.

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With respect to the rejection of the remaining claims, we note that the Examiner relies on Avis for additional features claimed in the other dependent claims. However, the Examiner has not pointed to any convincing rationale in modifying Avis in order to overcome the deficiencies of Zhu as discussed above. Accordingly, we do not sustain the 35 U.S.C. § 103 rejection of claims 4-7 and 10 over Zhu and Avis.

<div align="center">CONCLUSION</div>

In view of the foregoing, the decision of the Examiner rejecting claims 1-3, 8, 9 and 11-14 under 35 U.S.C. § 102 and rejecting claims 4-7 and 10 under 35 U.S.C. § 103 is reversed.

<div align="center">REVERSED</div>

JERRY SMITH   )
Administrative Patent Judge   )
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)
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) BOARD OF PATENT
HOWARD B. BLANKENSHIP   )   APPEALS
Administrative Patent Judge   )   AND
) INTERFERENCES
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MAHSHID D. SAADAT   )
Administrative Patent Judge   )

MDS/rwk

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